

REMARKS

Claims 1-44 stand rejected under 35 USC 112, second paragraph, as being indefinite. Applicant respectfully requests reconsideration of the claims, as now presented, in view of the following.

The Board of Patents and Appeals has clearly defined the above law to require the Examiner to carry the burden of showing that the proposed claim language is indefinite to one of skill in the art, in light of the specification:

"In rejecting a claim under the second paragraph of 35 USC 112, it is incumbent on the examiner to establish that one of ordinary skill in the pertinent art, when reading the claims in light of the supporting specification, would not have been able to ascertain with a reasonable degree of precision and particularity the particular area set out and circumscribed by the claims. *Ex parte Wu*, 10 USPQ 2d 2031, 2033 (B.P.A.I. 1989).

The Examiner states that it is unclear how the mounting of one antenna can have a non-unique phase center. The Examiner also questions, "How does a single antenna have a plurality of phase centers?"

However, it is well known to those of skill in this art that the mounting of one antenna can have a plurality of phase centers. Thus, it is well known that a single antenna can have a plurality of phase centers. Hopefully, this answers the Examiner's question. In the background portion of the application, beginning on page 2, line 14, Applicant explained that a wrap-around

antenna may have a plurality of different phase centers, equal to the number of observed transmitters, such as satellites. The phase centers will vary with respect to the relative orientation of the antenna and the satellites involved. Furthermore, Applicant provided a definition of a distributed antenna on page 19, line 8, as a radiator with a non-unique phase center which may comprise one or more elements.

Contrary to or in explanation of, the Examiner's assertions and/or questions regarding the state of the art, antennas and antenna arrays with non-unique phase centers are well known to those of skill in this art. Although the background of the art was already summarized in the specification, as discussed above, Applicant attaches hereto two articles that corroborate Applicant's summary as to the state of the art. In the article by D. Taggart et al. from 1995, on page 1050, it is specifically stated that "the phase center for the individual elements may not be unique." In the article by Steven R. Best, p 46, it is stated that the antenna phase center may be angular dependent, i.e. the phase center may vary. Applicant also provides a listing, which includes additional technical articles that, by their title, clearly show that antennas with non-unique phase centers are well known to those of skill in the art.

Thus, to the extent the above rejection is based on the erroneous contention that it is unclear to one of skill in the art how the mounting of one antenna can have a non-unique phase center, the rejection is respectfully traversed.

With respect to claims 27-32 the Office Action states the claims are indefinite because the variables are undefined. However, it is respectfully submitted the variables involved and the GPS equations to which the equations in the claims refer are extremely well known, e.g. see

equation 1 of Applicant's specification which is quite familiar to those of skill in the art. Moreover, the identical equations and variables are described in great detail in the specification. As discussed above, the question of whether claims are indefinite to one of skill in the art must be considered in the light of the specification and the prior art. In the present case, given the prior art and the specification, it is virtually inconceivable that one of skill in the art will not be able to ascertain with reasonable precision the particular area set out and circumscribed by the claims.

With respect to claim 33, improper antecedent basis was noted by the Examiner where the word "antennas" was inadvertently utilized instead of the synonym thereof, i.e., "radiators". Applicant has therefore corrected the antecedent basis problem in claim 33 and also noted and corrected the same problem in claims 36, and 38-40.

In light of the above amendments and remarks, the rejection of Claims 1-44 under 35 USC 112 is respectfully traversed.

Claims 1- 44 stand rejected under 35 USC 102(b) as being anticipated by Lightsey (USPN 6,005,514) and Fenton et al. (USPN 6,128, 557). Claims 1-3, 5, 12, 13, 14, 22, 24, 25, 26, 33-37 stand rejected under 35 USC 102(b) as being anticipated by Ray et al. (USPN 6,188,357).

It is submitted that the above-cited references do not disclose antennas having non-unique phase centers, as is specifically required by the explicit language of each of Applicant's claims. In each of the cited references, the phase center of the antennas in question is assumed to be known. More specifically, the cited prior art does not provide a means for determining the

— has no  
nothing to  
do w/ claim  
language

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location or attitude of a body based on signals received by one or more distributed antennas with non-unique phase centers from a plurality of transmitters. Furthermore, the cited prior art requires two or more antennas, whereas the method disclosed herein may be applied to a single antenna.

Therefore, the rejections under 35 USC 102 based on the cited art are respectfully traversed.

